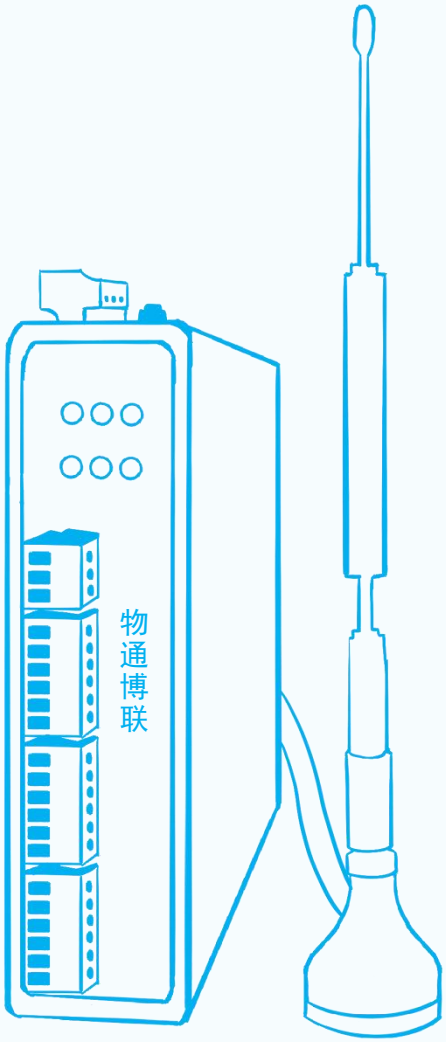
WideIOT

IOT Terminal

（WD240）



SPECIFICATION

WideIOT ● 2011

Product Introduction

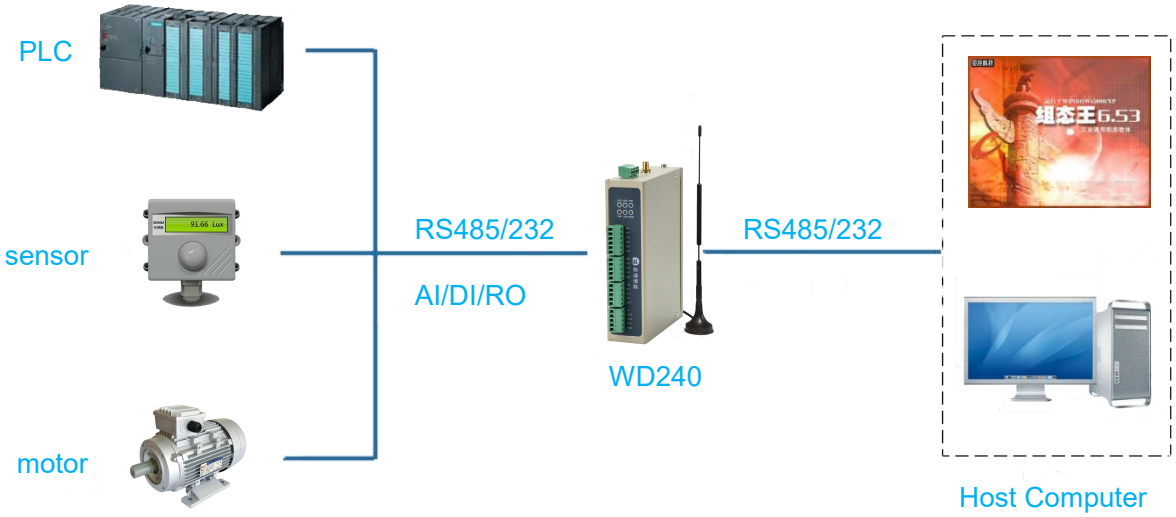
The WD240 series industrial data transmission terminal is a rail-mounted industrial-grade I/O data acquisition, LORA data transparent transmission, and 4G data cloud - uploading industrial intelligent terminal. It supports LORA wireless transmission, 4G data cloud - uploading, multi-channel I/O data acquisition, Modbus RTU protocol, and wireless 485 transparent transmission functions.

It supports multiple optional analog inputs, analog outputs, digital inputs, and digital outputs (multiple configurations are available, such as 8AI, 4DI, 4RO or 4AI, 8DI, 4RO or 4AI, 4DI, 4DO, 4RO or 2AO, 6AI, 4DI, 4RO, etc.). The data acquisition function can be achieved by reading through the wired 232/485 serial port using Modbus RTU or through the wireless LORA with adjustable power. It also supports the function of wireless LORA to serial port transparent transmission and wireless 4G data uploading to cloud programs. With its industrial - grade design, it is stable, reliable, and flexible for expansion, making it highly suitable for data acquisition in complex industrial environments, wireless local short - distance transmission within 12KM, and 4G wide - area network data cloud - uploading.

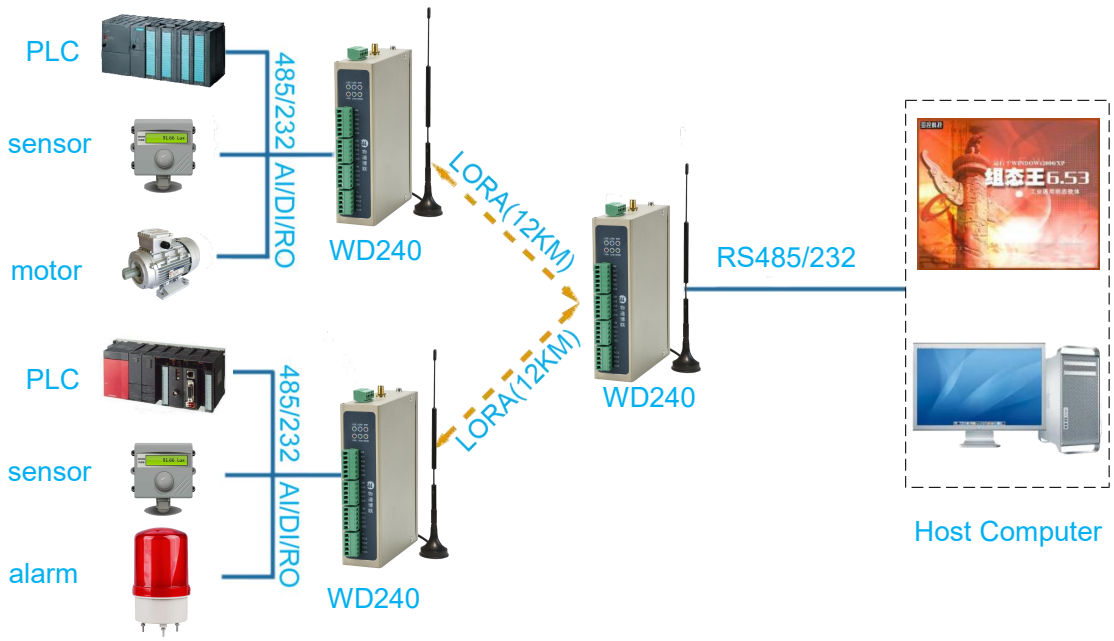
It is applicable to industries such as mines, oil wells, water conservancy monitoring, intelligent agriculture, intelligent transportation, intelligent factories, industrial control, building monitoring, the medical industry, and hotels.

Application Modes

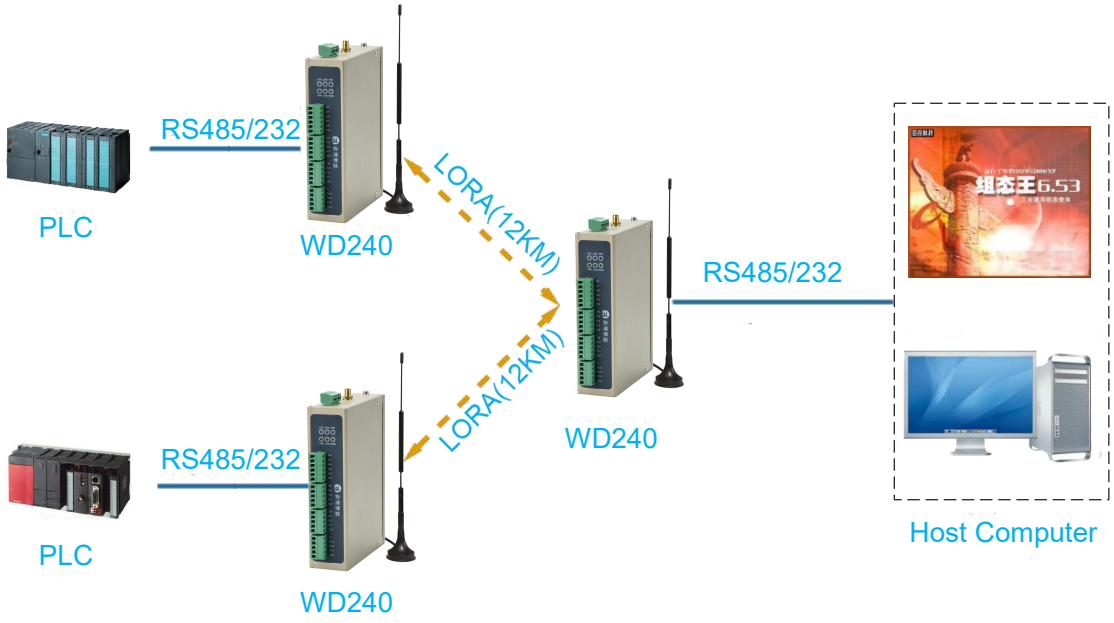
- The Host Computer reads and controls the I/O of the WD240 (Slave Device) through the serial port.



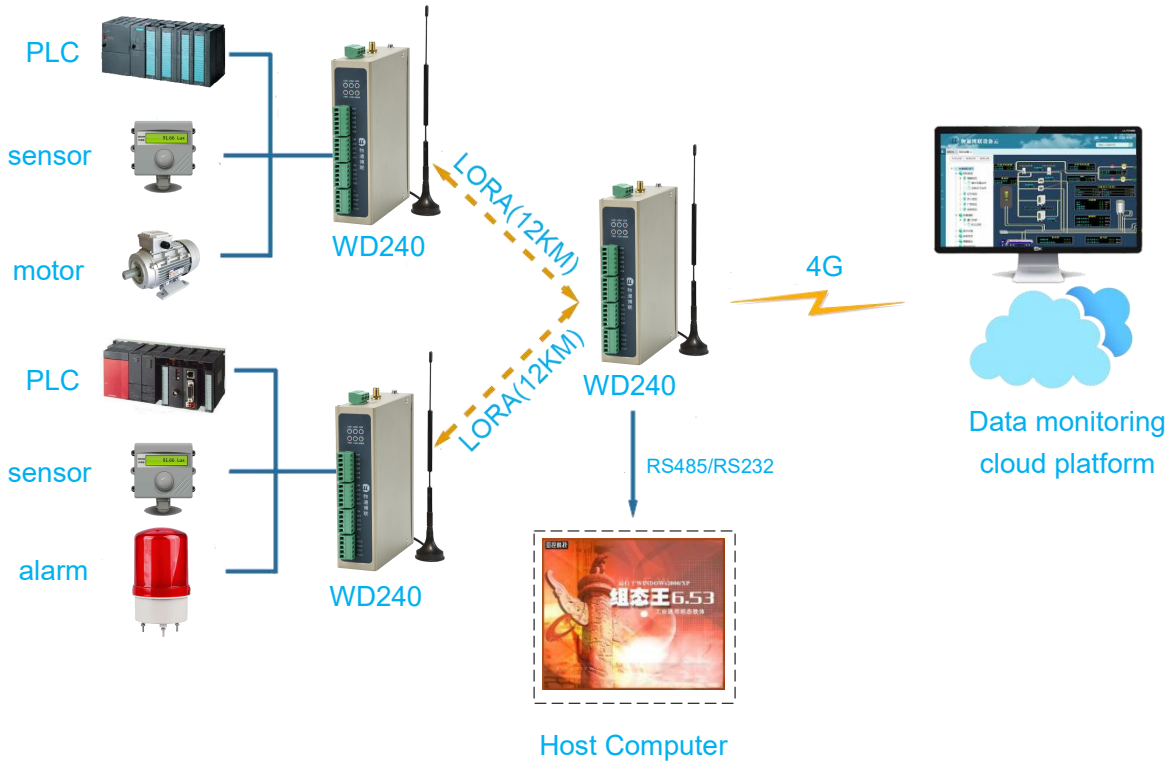
- The Host Computer reads the I/O of the WD240 (Slave Device) via wireless LORA.



The Host Computer reads the I/O of the WD240 and the data of the connected PLC through LORA.



The cloud platform reads the I/O of the WD240 and the data of the connected PLC through wireless LORA and the Internet.



Product Features

Abundant IO Data Collection Interfaces

1）Supports 4 channels of 12 - bit analog input, compatible with current - type and voltage - type, and various ranges and ratio calculations.

2）Supports 4 channels of dry and wet contact connection types, with optional 0 - 60V digital input and counter function.

3）Supports 4 channels of 3A relay output, and can also access 0 - 30V DC and 0 - 250V AC signals.

4）Features a multiplexed circuit that can be configured as 4AI/4DI/4DO/2AO - 2AI, with a maximum of 8 channels for appropriate AI/DI/DO.

Wireless LORA Transmission Function

1）Embeds a high - power, long - distance LORA transmission chip with a transmit power of up to 22dBm and a maximum transmission distance of 12KM.

2）Supports selectable frequency bands of 410 - 493MHz and 850 - 930MHz, applicable both at home and abroad.

3）Allows flexible configuration of LORA channels, power, air rate, and other parameters.

4）Supports setting the maximum frame length and timeout time, suitable for various data packet and response speed scenarios.

Standard Modbus RTU Protocol

Supports the standard Modbus RTU protocol for local I/O control and data acquisition.

Wireless 4G Data Cloud - Uploading

Supports uploading serial port and I/O data to various cloud platforms and systems through the 4G network using the MQTT protocol.

Wireless Transparent Transmission Function

1）Supports wireless transparent transmission of 232 or 485 serial ports, as well as point - to - point and point - to - multi - point data transparent transmission.

2）Enables interference - free data transparent transmission with different systems coexisting.

3）Features a data caching function to improve transmission efficiency and regulate data packet segmentation.

High - Reliability Industrial - Grade Design

1）6 - 35V wide - voltage design and - 40 - +85° C wide - temperature design.

2）Isolated RS232 or RS485 design with 15KV ESD protection.

3）Opto - coupled isolated digital input, precise reference voltage, and high - reliability relay design.

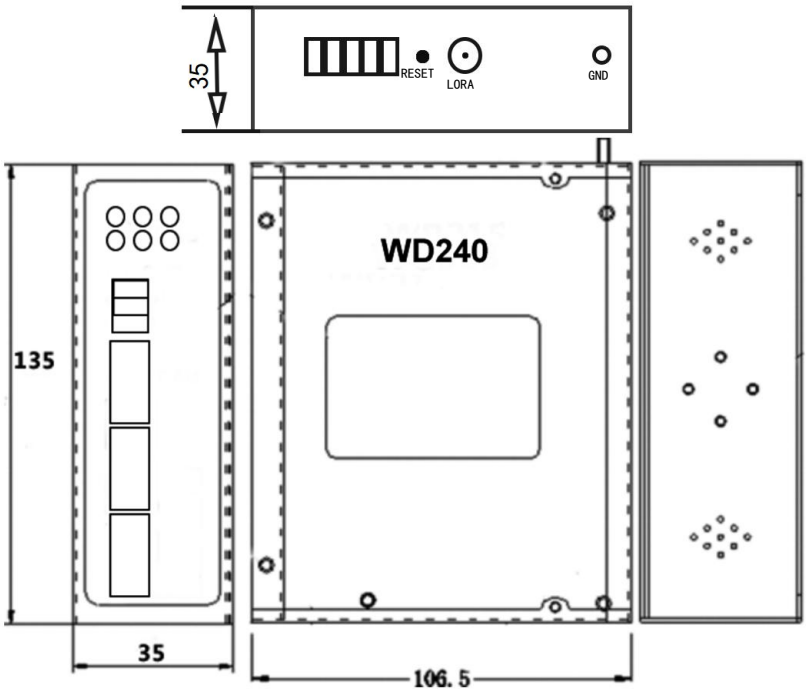
4）Software and hardware watchdogs. Once an anomaly is detected, it can quickly diagnose and self - repair to ensure normal operation.

Product Specifications

Hardware specifications		
Hardware Platform	CPU Core	32 - bit Arm Cortex - M4
Interface Characteristics	Power Interface	DC 9V - 35V (terminal block)
	Serial - Port Interface	1 serial port (RS232/RS485), 15KV ESD protection, 1200 - 128000bit/s, default 19200
	Analog Input	4/8 channels of 12 - bit acquisition accuracy AI (current - type and voltage - type 可选). Current - type: 4 - 20mA, 0 - 20mA; Voltage: 0 - 5V, 0 - 10V, etc.
	Digital Input	4/8 channels of opto - coupled isolated 0 - 60V, supports dry and wet contact access (default dry contact, 4 - channel counter supported)
	Digital Output	4 channels of 3A relay output (250V AC, 30V DC), and can be expanded to 4 channels of transistor DO
	Antenna Connector	LORA Antenna: SMA x 1 / 4G Antenna: SMA x 1
	Terminal Block	3*6*3.81mm, 1*3*3.81mm, 1*5*3.81mm
4G (Optional)	Network Standard	LTE Cat1, maximum downlink rate 10Mbps, maximum uplink rate 5Mbps
LoRa (Optional)	Working Frequency Band	410 - 493MHz or 850 - 930MHz optional
	Receiving Sensitivity	150dBm
	Transmit Power	22dBm
	Communication Distance	Maximum 12KM (recommended indoor 1 - 2KM, outdoor 4 - 6KM)
	Air Rate	0.48Kbps - 62.5Kbps (up to 300Kbps)
	Transmit Current	650mA
	LoRa Channels	6 configurable channels

Mechanical Characteristics	Dimensions	136x106.5x35mm
	Installation Method	Rail - mounted
	Shell	Metal shell (gold - colored)
	Protection Level	IP30
	Heat Dissipation Method	Fan - less heat dissipation
	Weight	280g
EMC Index	Electrostatic Discharge Immunity	GB/T17626.2 - 2018, level4
	Electrical Fast Transient Pulse Group Immunity	GB/T17626.4 - 2018, level4
	Oscillatory Wave Magnetic Field Immunity	GB/T17626.18 - 2016, level4
	Radio - Frequency Electromagnetic Field Radiation Immunity	GB/T17626.3 - 2016, level4
	Surge (Impact) Immunity	GB/T17626.5 - 2019, level4
	Power - Frequency Magnetic Field Immunity	GB/T17626.8 - 2006, level4
Physical Characteristics	Vibration	GB/T2423.10 - 2008
	Shock	GB/T2423.5 - 2019
	Drop	GB/T2423.8 - 1995
Environment Humidity	Environment Humidity	5% ~ 95% (no condensation)
	Storage Temperature	-40℃~ 85℃
	Operating Temperature	-20℃ ~ 70℃

Product Size



Product Selection

Hardware Selection	
Order number	WD240 - <N> - <I> - <S>
N (Uplink Network)	L (with LORA module) / G (with 4G module) / W (with WIFI module, under development)
I (IO Module)	M0844 (M represents module, 0 means 0 AO, 8 means 8 AI (4AI + 4 multiplexed AI), 4 means 4 DI, 4 means 4 RO)
S (Serial Port Type)	232: RS232 serial port; 485: RS485 serial port
Examples	WD240 - LM0844 - 485 (8AI - 4DI - 4DO, Chinese frequency band: 410 - 493MHz, 485 serial port) WD240 - LM0484 - 232 (4DI - 4AI - 4DI - 4RO, Chinese frequency band: 410 - 493MHz, 232 serial port) WD240 - LM0448 - 485 (4DO - 4AI - 4DI - 4RO, Chinese frequency band: 410 - 493MHz, 485 serial port) WD240 - LM2644 - 232 (2AO - 6AI - 4DI - 4RO, Chinese frequency band: 410 - 493MHz, 232 serial port) WD240 - LM0844 - 485 (8AI - 4DI - 4DO, overseas frequency band: 850 - 930MHz, 485 serial port) WD240 - GM0844 - 485 (8AI - 4DI - 4DO, 4G CAT1, 485 serial port), etc.

Company Introduction

Established in 2011, WideIOT is a leading provider of industrial Internet of Things products and industrial digital solutions. It focuses on offering products and solutions such as wireless data terminals, industrial intelligent gateways, equipment remote systems, and industrial application cloud platforms for equipment manufacturers, smart factories, and industry projects. It helps customers achieve digital operation management and tap new values in the industrial Internet.

The products of WideIOT are widely used in various industrial fields, including smart factories, equipment manufacturers, the environmental protection industry, the energy industry, municipal engineering, industrial automation, smart agriculture, and building intelligence. They are favored by top - tier domestic and foreign customers such as BOE, Foxconn, ASD, TCL, Schneider, Shanghai Electric, Shougang Group, Water Affairs Group, and Southern Power, as well as a large number of small and medium - sized enterprises.

WideIOT Network Technology Co. Ltd.

Company Website： www.WideIOT.com

Contact Phone: +86-0592-2031080 / +86-400-9600-775

Contact Address: Software Park Phase III, Xiamen City, Fujian Province, China

Website

WeChat Account